



# RESEARCH PROJECT CAPSULE [13-1SA]

October 2012

TECHNOLOGY TRANSFER PROGRAM

## Distracted Driving and Associated Crash Risks

### JUST THE FACTS:

**Start Date:**

July 1, 2012

**Duration:**

18 months

**End Date:**

December 30, 2013

**Funding:**

State: TT-Reg & RITA

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### POINTS OF INTEREST:

Problem Addressed / Objective of  
Research / Methodology Used  
Implementation Potential

[WWW.LTRC.LSU.EDU](http://WWW.LTRC.LSU.EDU)

This project is associated with the Louisiana State University (LSU) partnership with the Regional Southwest University Transportation Center (SWUTC). The SWUTC is a University Transportation Center housed at Texas A&M and funded by the Research and Innovative Technology Administration (RITA) of the U.S. Department of Transportation (DOT).

### PROBLEM

Factors affecting the cognitive tasks associated with driving are becoming increasingly critical to the overall roadway safety performance.

Therefore, more research is needed in order to understand the complexity and impact of distraction on driving behavior. Such distractions are likely to affect the driving performance and, consequently, elevate the crash risk. As such, there is a dire need to understand the prevalence of driver distractions in conjunction with crashes and near-crashes, including hands-free talking, texting, eating, reading, etc.

The concept of distracted driving and associated crash risks has long been acknowledged as a significant road safety concern across the globe and various researchers have focused on this concern over the last two decades. Even so, drivers continue to engage in distracting non-driving related activities while driving. Such activities can be classified under three main types: visual, cognitive, and physical distraction. All these types of distraction have been acknowledged to negatively affect driver performance and thus, increase the risks of associated crashes and near-misses. Driver performance is affected in the following areas: reduced lateral and longitudinal control, with effects being more pronounced in older drivers; reduced situation awareness; and slower response times of up to 50% to roadway hazards. It is therefore not surprising that The National Safety Council estimated that 28% of all crashes in 2008 involved driver distraction, particularly handheld and hands-free cell phone talking and texting, accounting for 1.6 million crashes that year (Kolosh, 2009).

### OBJECTIVE

The acquisition of a driving simulator at LSU provides ample research opportunities for conducting research in the area of human factors, particularly in driver distraction. The objective of this research is to use the driving



simulator on the LSU campus to measure the risks associated with various distractions faced by the driving population. Participants will be placed in simulated environments while being exposed to differing driver distractions to determine the effect on the driving task.

## METHODOLOGY

Researchers will conduct the following tasks:

1. Conduct a literature search.
2. Identify a set of cognitive tasks that previous research considered as distracting to drivers.
3. Identify the most appropriate set of parameters that measure the driving behavior under distraction.
4. Set up the experimental work and conduct simulation experiments involving human subjects.
5. Perform statistical analysis of the data collected from the simulation experiments.
6. Analyze results, make conclusions, and prepare a final report.

## IMPLEMENTATION POTENTIAL

This study will assist highway safety professionals in developing behavioral strategies to mitigate crashes due to distracted driving. It will also allow for the development of public awareness and education programs specifically targeting distracted driving. Additionally, it will provide information to elected officials and inform decision makers on matters related to distracted driving.



*Figure 1*  
*LSU driving simulator*

<http://www.lsu.edu/departments/gold/2011/07/simulator.shtml>